

Roles (restriction relationships) declared in the NCI Thesaurus, as of August 21, 2009			
Role Name	Domain	Range	Notes
Allele_Absent_From_Wild-type_Chromosomal_Location	Gene_Kind	Anatomy_Kind	
Allele_Associated_With_Disease	Gene_Kind	Findings_and_Disorders_Kind	
Allele_Ceases_Function_In_Pathway	Gene_Kind	Pathway_Kind	
Allele_Has_Abnormality	Gene_Kind	Molecular_Abnormality_Kind	
Allele_Has_Activity	Gene_Kind	Properties_or_Attributes_Kind	
Allele_In_Chromosomal_Location	Gene_Kind	Anatomy_Kind	
Allele_Is_Cancer_Related_Type	Gene_Kind	Gene_Kind	
Allele_Not_Associated_With_Abnormality	Gene_Kind	Molecular_Abnormality_Kind	
Allele_Not_Associated_With_Disease	Gene_Kind	Findings_and_Disorders_Kind	
Allele_Plays_Altered_Role_In_Process	Gene_Kind	Biological_Process_Kind	
Allele_Plays_Role_In_Metabolism_Of_Chemical_Or_Drug	Gene_Kind	Chemicals_and_Drugs_Kind	
Anatomic_Structure_Has_Location	Anatomy_Kind	Anatomy_Kind	
Anatomic_Structure_is_Physical_Part_of	Anatomy_Kind	Anatomy_Kind	
Biological_Process_Has_Associated_Location	Biological_Process_Kind	Anatomy_Kind	
Biological_Process_Has_Initiator_Chemical_or_Drug	Biological_Process_Kind	Chemicals_and_Drugs_Kind	
Biological_Process_Has_Initiator_Process	Biological_Process_Kind	Biological_Process_Kind	
Biological_Process_Has_Result_Anatomy	Biological_Process_Kind	Anatomy_Kind	
Biological_Process_Has_Result_Biological_Process	Biological_Process_Kind	Biological_Process_Kind	
Biological_Process_Has_Result_Chemical_or_Drug	Biological_Process_Kind	Chemicals_and_Drugs_Kind	
Biological_Process_Is_Part_of_Process	Biological_Process_Kind	Biological_Process_Kind	
Chemical_Or_Drug_Affects_Abnormal_Cell	Chemicals_and_Drugs_Kind	Abnormal_Cell_Kind	
Chemical_or_Drug_Affects_Cell_Type_or_Tissue	Chemicals_and_Drugs_Kind	Anatomy_Kind	
Chemical_Or_Drug_Affects_Gene_Product	Chemicals_and_Drugs_Kind	Gene_Product_Kind	
Chemical_or_Drug_FDA_Approved_for_Disease	Chemicals_and_Drugs_Kind	Findings_and_Disorders_Kind	
Chemical_or_Drug_Has_Accepted_Therapeutic_Use_For	Chemicals_and_Drugs_Kind	Findings_and_Disorders_Kind	
Chemical_or_Drug_Has_Mechanism_Of_Action	Chemicals_and_Drugs_Kind	Biological_Process_Kind	
Chemical_or_Drug_Has_Physiologic_Effect	Chemicals_and_Drugs_Kind	Biological_Process_Kind	

Chemical_or_Drug_Has_Study_Therapeutic_Use_For	Chemicals_and_Drugs_Kind	Findings_and_Disorders_Kind	
Chemical_or_Drug_Is_Metabolized_By_Enzyme	Chemicals_and_Drugs_Kind	Gene_Product_Kind	
Chemical_or_Drug_Plays_Role_in_Biological_Process	Chemicals_and_Drugs_Kind	Biological_Process_Kind	
Chemotherapy_Regimen_Has_Component	Chemotherapy_Regimen_Kind	Chemicals_and_Drugs_Kind	
Conceptual_Part_Of	NCI_Kind	NCI_Kind	
Disease_Excludes_Abnormal_Cell	Findings_and_Disorders_Kind	Abnormal_Cell_Kind	
Disease_Excludes_Cytogenetic_Abnormality	Findings_and_Disorders_Kind	Molecular_Abnormality_Kind	
Disease_Excludes_Finding	Findings_and_Disorders_Kind	Findings_and_Disorders_Kind	
Disease_Excludes_Metastatic_Anatomic_Site	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Excludes_Molecular_Abnormality	Findings_and_Disorders_Kind	Molecular_Abnormality_Kind	
Disease_Excludes_Normal_Cell_Origin	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Excludes_Normal_Tissue_Origin	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Excludes_Primary_Anatomic_Site	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Has_Abnormal_Cell	Findings_and_Disorders_Kind	Abnormal_Cell_Kind	
Disease_Has_Associated_Anatomic_Site	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Has_Associated_Disease	Findings_and_Disorders_Kind	Findings_and_Disorders_Kind	
Disease_Has_Cytogenetic_Abnormality	Findings_and_Disorders_Kind	Molecular_Abnormality_Kind	
Disease_Has_Finding	Findings_and_Disorders_Kind	Findings_and_Disorders_Kind	
Disease_Has_Metastatic_Anatomic_Site	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Has_Molecular_Abnormality	Findings_and_Disorders_Kind	Molecular_Abnormality_Kind	
Disease_Has_Normal_Cell_Origin	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Has_Normal_Tissue_Origin	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Has_Primary_Anatomic_Site	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_Is_Grade	Findings_and_Disorders_Kind	Properties_or_Attributes_Kind	
Disease_Is_Stage	Findings_and_Disorders_Kind	Properties_or_Attributes_Kind	
Disease_May_Have_Abnormal_Cell	Findings_and_Disorders_Kind	Abnormal_Cell_Kind	
Disease_May_Have_Associated_Disease	Findings_and_Disorders_Kind	Findings_and_Disorders_Kind	
Disease_May_Have_Cytogenetic_Abnormality	Findings_and_Disorders_Kind	Molecular_Abnormality_Kind	
Disease_May_Have_Finding	Findings_and_Disorders_Kind	Findings_and_Disorders_Kind	
Disease_May_Have_Molecular_Abnormality	Findings_and_Disorders_Kind	Molecular_Abnormality_Kind	
Disease_May_Have_Normal_Cell_Origin	Findings_and_Disorders_Kind	Anatomy_Kind	
Disease_May_Have_Normal_Tissue_Origin	Findings_and_Disorders_Kind	Anatomy_Kind	
EO_Anatomic_Structure_is_Physical_Part_of	EO_Anatomy_Kind	EO_Anatomy_Kind	
EO_Derived_by_Technique	Organism_Kind	Technique_Kind	
EO_Develops_Disease	Organism_Kind	EO_Findings_and_Disorders_Kind	

EO_Disease_Has_Associated_Cell_Type	EO_Findings_and_Disorders_Kind	EO_Anatomy_Kind	
EO_Disease_Has_Associated_EO_Anatomy	EO_Findings_and_Disorders_Kind	EO_Anatomy_Kind	
EO_Disease_Has_Property_or_Attribute	EO_Findings_and_Disorders_Kind	Properties_or_Attributes_Kind	
EO_Disease_Maps_to_Human_Disease	EO_Findings_and_Disorders_Kind	Findings_and_Disorders_Kind	
EO_Disease_Metastatic_to_EO_Anatomy	Findings_and_Disorders_Kind	Anatomy_Kind	
EO_Models_Human_Disease	Organism_Kind	Findings_and_Disorders_Kind	
Gene_Associated_With_Disease	Gene_Kind	Findings_and_Disorders_Kind	
Gene_Found_In_Organism	Gene_Kind	Organism_Kind	
Gene_Has_Abnormality	Gene_Kind	Molecular_Abnormality_Kind	
Gene_Has_Physical_Location	Gene_Kind	Anatomy_Kind	
Gene_In_Chromosomal_Location	Gene_Kind	Anatomy_Kind	
Gene_is_Biomarker_of	Gene_Kind	Findings_and_Disorders_Kind	
Gene_is_Biomarker_Type	Gene_Kind	Diagnostic_and_Prognostic_Factors_Kind	
Gene_Is_Element_in_Pathway	Gene_Kind	Pathway_Kind	
Gene_Plays_Role_in_Process	Gene_Kind	Biological_Process_Kind	
Gene_Product_Encoded_by_Gene	Gene_Product_Kind	Gene_Kind	
Gene_Product_Expressed_In_Tissue	Gene_Product_Kind	Anatomy_Kind	
Gene_Product_Has_Abnormality	Gene_Product_Kind	Molecular_Abnormality_Kind	
Gene_Product_Has_Associated_Anatomy	Gene_Product_Kind	Anatomy_Kind	
Gene_Product_Has_Biochemical_Function	Gene_Product_Kind	Gene_Product_Kind	
Gene_Product_Has_Chemical_Classification	Gene_Product_Kind	Gene_Product_Kind	
Gene_Product_Has_Malfunction_Type	Gene_Product_Kind	Biological_Process_Kind	
Gene_Product_Has_Organism_Source	Gene_Product_Kind	Organism_Kind	
Gene_Product_Has_Structural_Domain_Or_Motif	Gene_Product_Kind	Anatomy_Kind	
Gene_Product_is_Biomarker_of	Gene_Product_Kind	Findings_and_Disorders_Kind	
Gene_Product_is_Biomarker_Type	Gene_Product_Kind	Diagnostic_and_Prognostic_Factors_Kind	
Gene_Product_Is_Element_in_Pathway	Gene_Product_Kind	Pathway_Kind	
Gene_Product_is_Physical_Part_of	Gene_Product_Kind	Gene_Product_Kind	
Gene_Product_Malfunction_Associated_With_Disease	Gene_Product_Kind	Findings_and_Disorders_Kind	
Gene_Product_Plays_Role_In_Biological_Process	Gene_Product_Kind	Biological_Process_Kind	

Procedure_Has_Completely_Excised_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_Has_Excised_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_Has_Imaged_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_Has_Partially_Excised_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_Has_Target_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_May_Have_Completely_Excised_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_May_Have_Excised_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_May_Have_Imaged_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_May_Have_Partially_Excised_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Procedure_May_Have_Target_Anatomy	Clinical_or_Research_Activity_Kind	Anatomy_Kind	
Regimen_Has_Accepted_Use_For_Disease	Chemotherapy_Regimen_Kind	Findings_and_Disorders_Kind	
Technique_Has_Associated_Condition	Technique_Kind	Findings_and_Disorders_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Purpose	Technique_Kind	Clinical_or_Research_Activity_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Sample_or_Specimen_Anatomy	Technique_Kind	Anatomy_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Sample_or_Specimen_Chemical_or_Drug	Technique_Kind	Chemicals_and_Drugs_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Target_Anatomy	Technique_Kind	Anatomy_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Target_Chemical_or_Drug	Technique_Kind	Chemicals_and_Drugs_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Target_Disease	Technique_Kind	Findings_and_Disorders_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Target_Organism	Technique_Kind	Organism_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Has_Target_Protein	Technique_Kind	Gene_Product_Kind	Deprecated and unused. Superceded by Procedure role.

Technique_Is_Used_In_Technique	Technique_Kind	Technique_Kind	Deprecated and unused. Superceded by Procedure role.
Technique_Uses_Equipment	Technique_Kind	Equipment_Kind	Deprecated and unused. Superceded by Procedure role.